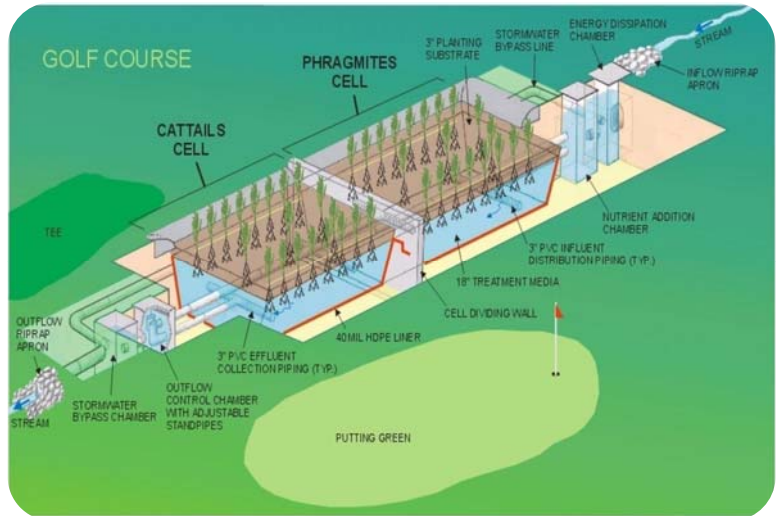


Roux Associates designed, installed and continues to monitor a constructed wetland at a major petroleum company's active petroleum terminal (and former refinery) in East Providence, Rhode Island. The system was installed as part of our extensive on-going work at the terminal, which has included pilot and full scale implementation of numerous innovative and conventional remedial approaches.

The 7,000 gpd pilot treatment wetland was installed to passively intercept and treat BTEX impacted shallow groundwater discharging to an ephemeral stream traversing a public golf course. The source of contamination was attributed to the historic presence of petrochemical storage tanks located hydraulically upgradient. While the discharges were nonhazardous, the associated odors and presence of iron staining created an aesthetic problem for the client. The system's high aesthetic, low visual impact appeal was ideal for its golf course setting.



The system was constructed in the spring of 1996, and a growth and maturation plan was developed in order to evaluate the system performance. Routine sampling results indicate BTEX removals have consistently exceeded 98 percent. Based upon the success of the pilot system, a full scale Engineered Natural System (ENS) was designed to improve groundwater capture and treatment, but additionally provide treatment and detention of surface water and stormwater runoff.